

REMARKS

Claims 1-26 are presented for consideration, with Claims 1, 17, 20 and 21 being independent.

The specification and abstract have been reviewed and amended to correct minor informalities and improve their idiomatic English form. In amending the abstract, the objection set forth in paragraph 1 of the Office Action has been noted.

In the claims, independent Claim 1 has been amended to further distinguish Applicant's invention from the cited art. In addition, editorial changes have been made to independent Claim 1 and selected dependent claims. Further, new Claims 17-26 have been added to provide an additional scope of protection. Support for the new claims can be found on page 8, line 26, et seq. of the specification.

Claim 1 stands rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Dunfield '083. Claims 1-13 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Thornton '952. Finally, Claims 14-16 stand rejected under 35 U.S.C. §103 as allegedly being obvious over Thornton in view of Ohzeki '596. These rejections are respectfully traversed.

Claim 1 of Applicant's invention relates to a bearing assembly comprised of a guide having a top side provided with a guide surface comprising a magnetic body, a moving body which moves along the guide surface, a first movable guide which moves along the guide surface and moves the moving body in a first direction, and a second movable guide which moves along the guide surface and moves the moving body in a second direction orthogonal to the first direction. In addition, a bearing is provided on a portion of the first and second movable guides and opposes the guide surface, and a magnet having an opposing surface that opposes the

guide surface is provided on the first and second movable guides for the purposes of applying a magnetic attractive force between the first and second movable guides and the guide surface. As claimed, a relationship of the size and/or placement of the guide surface and the opposing surface of the magnet is defined for the purpose of limiting displacement of the first and second movable guides in a width direction, which is orthogonal to a travelling direction of each of the first and second movable guides, to an allowable range, using a magnetic attractive force in the width direction produced in accordance with amount of deviation of the opposing surface of the magnet from the guide surface owing to displacement, which can occur when each of the first and second movable guides moves in the width direction.

In accordance with Applicant's claimed invention, a unique and high performance bearing assembly can be provided.

The Dunfield patent relates to a radially stable magnetic bearing for a spindle motor. As shown in Figure 2, a spindle motor assembly 110 includes a stator 112 having an axial pivot 114 for supporting a hub shaft 116 of a rotor 117. Annular disc 126 and second annular disc 146 provide a magnetic bearing to stabilize the rotating rotor.

In contrast to Applicant's claimed invention, however, Dunfield does not teach or suggest, among other features, first and second movable guides for moving a moving body in a first direction and a second direction orthogonal to the first direction. As discussed above, in Dunfield the rotor 117 moves in a rotational direction. Accordingly, reconsideration and withdrawal of the rejection of Claim 1 under 35 U.S.C. §102(b) is respectfully requested.

With respect to Thornton, this patent provides a guidance system for a vehicle to be moved in a single axis direction. With reference to Figure 7A, a wheeled steering mechanism 18 is equipped with a guidance magnet 20A-20D at each corner. The guidance

magnets include field focusing poles 26 for aligning the magnets with laminated guidance rails 28.

The Thornton patent fails, however, to teach or suggest, among other features, providing a first movable guide and a second movable guide for moving a moving body in a first direction and a second direction orthogonal to the first direction. As noted above, the wheeled steering mechanism is design to move in only one direction. Thornton also fails to teach or suggest that a relationship of the size and/or placement of the guide surface and an opposing surface of a magnet is defined as set forth in Applicant's Claim 1. Accordingly, reconsideration and withdrawal of the rejection of Claims 1-13 under 35 U.S.C. §102(b) is respectfully requested.

The secondary citation to Ohzeki relates to a movable stage used in a semiconductor exposure device. Ohzeki fails, however, to compensate for the deficiencies in Thornton as discussed above with respect to Claim 1. Therefore, without conceding the propriety of combining Thornton and Ohzeki in the manner proposed in the Office Action, such a combination still fails to teach or suggest Applicant's claimed invention. Accordingly, reconsideration and withdrawal of the rejection of Claims 14-16 under 35 U.S.C. §103 is respectfully requested.

Therefore, it is submitted that Applicant's invention as set forth in independent Claim 1 is patentable over the cited art. In addition, dependent Claims 2-16 set forth additional features of Applicant's invention. Independent consideration of the dependent claims is respectfully requested.

New Claims 17-26 are also submitted to be patentable over the cited art.

Claim 17 relates to a stage apparatus comprised of a guide provided with a surface comprising a magnetic body, a moving body movable along the surface in a first direction and a second direction, and first and second movable guides. The first movable guide moves the moving body in the second direction and guides the moving body in the first direction, and the second movable guide moves the moving body in the first direction and guides the moving body in the second direction. In addition, the magnets are placed in the first and second movable guides and produce magnetic attractive forces within the magnetic body. The magnetic body and the magnets are provided so that movement of the first movable guide in the second direction is limited by the magnetic attractive force and movement of the second movable guide in the first direction is limited by the magnetic attractive force.

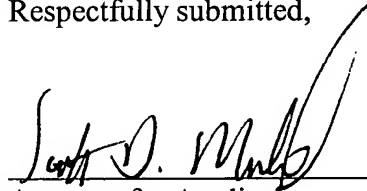
In Claim 20, a stage apparatus comprises a guide provided with a surface comprising a magnetic body, a moving body movable along the surface, and a gas bearing for supporting the moving body with respect to the surface. In addition, a magnet is supplied to the moving body and produces a magnetic attractive force with the magnetic body. The magnet is supplied to limit movement of the moving body in a direction orthogonal to its travelling direction and apply prepressure to the gas bearing.

Finally, Claim 21 relates to a stage apparatus comprised of a stage base, a moving body movable along a surface of the stage base in X and Y directions, and a magnet which is supplied to the moving body and produces a magnetic attractive force. The magnetic body and the magnet are placed to limit movement of the body so that the moving body does not go beyond predetermined strokes in the X and Y directions.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C.
office by telephone at (202) 530-1010. All correspondence should continue to be directed to our
below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Scott D. Malpede", is written over a horizontal line.

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